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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,438	07/26/2006	Fumitake Kaneko	9084-000004//NP	5387
27572 7590 06/21/2007 HARNESSE, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			EXAMINER EOFF, ANCA	
			ART UNIT 1709	PAPER NUMBER
			MAIL DATE 06/21/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/587,438

Applicant(s)

KANEKO ET AL.

Examiner

Anca Eoff

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>07/26/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Status

1. Claims 1-7 are pending in the application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraph of 35 U.S.C. 102 that forms the basis for the rejections under this section made in this Office action:

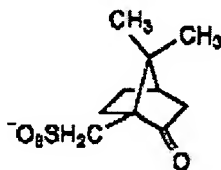
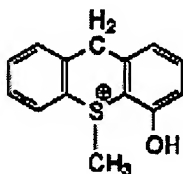
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

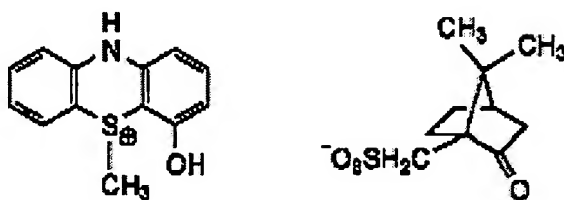
3. Claims 1-4 and 6-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi et al. (JP 2003-121999).

With regard to claim 1, Takahashi et al. disclose a negative resist composition comprising an acid generator (A_1), an alkali-soluble resin (B) and a crosslinker (C), which causes crosslinking under the action of the acid (abstract).

The acid generator (A_1) could have the structures (I) or (II):



(I) (compound A 1-13 in par.91)



(II) (compound A₁-34 in par.0096).

These compounds meet the limitations of claim 1 for an an onium salt acid generator, said onium salt having as anion portion a sulfonate with a polycyclic structure (in this case, the polycyclic structure is a norbornane compound).

With regard to claim 2, Takahashi et al. further disclose that the negative resist composition also comprises a basic compound (D), such as a nitrogen containing basic compound (par.0134, par.0137).

With regard to claims 3 and 7, the compounds of formulae (I) and (II) meet the limitations of the claims, since the polycycle of the sulfonate anion is a substituted norbornane lactone.

With regard to claim 4, the compounds of formulae (I) and (II) meet the limitation of the claim, the anion portion of the compounds of the above-mentioned formulae being identical with the anion of formula (1) of the instant application.

With regard to claim 6, Takahashi et al. further disclose a pattern formation process comprising the following steps:

- applying the negative resist composition on a substrate (par.0147);
- expose to radiation through a predetermined mask to form a resist pattern (par.0147-0148);

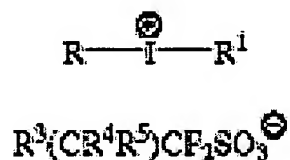
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- develop with an alkaline solution (par.0147, par.0149).

4. Claims 1-3 and 5-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Cameron et al. (US Pg-pub 2003/0027061).

With regard to claim 1, Cameron et al. disclose a negative-acting composition comprising a resin binder, a crosslinker component and a photoactive component (par.0088). Preferably the resin binder has functional groups that impart alkaline aqueous developability to the resist composition (par.0074).

The photoactive component is a photoacid generator, having the structure of formula (I A):



(I A) (par.0027), where R and R¹ are the same or different and are optionally substituted alkyl, optionally substituted carbocyclic acid, optionally substituted heteroalicyclic or heteroatomic ; and preferably R and R¹ are independently optionally substituted phenyl, naphthyl, thienyl (par.0025), R³ can be an optionally substituted adamantyl, optionally substituted isobornyl (par.0029), R⁴ and R⁵ are each independently hydrogen, optionally substituted C₁₋₂₀ alkyl, optionally substituted C₁₋₂₀ alkoxy or optionally substituted carbocyclic aryl (par.0030).

The compound of formula (I A) where R³ is an optionally substituted adamantyl or an optionally substituted isobornyl meet the limitation of claim 1 for an onium salt acid

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generator, said onium salt having as anion portion a sulfonate with a polycyclic structure (in this case, the polycyclic structure is a derivative of adamantane or norbornane).

With regard to claim 2, Cameron et al. also disclose that the resist composition comprises a base (organic basic compound) such as tetrabutylammonium hydroxide (par.0090).

With regard to claims 3 and 7, the compounds of formula (I A) where R^3 is an optionally substituted adamantyl (adamantane derivative) meet the limitation of the claim.

With regard to claim 5, the compound of formula (I A) meet the limitation of the claim, since the cation portion of the compound is an iodonium compound ($R-I^+-R^1$).

With regard to claim 6, Cameron et al. further disclose a process of forming a resist pattern comprising the steps:

- applying the photoresist on a substrate as a liquid coating composition;
- drying by heating to remove the solvent;
- exposing through a photomask to activating radiation;
- developing preferably with an aqueous,alkaline developer to form a relief image (par.0093).

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anca Eoff whose telephone number is 571-272-9810. The examiner can normally be reached on Monday-Friday, 6:30 AM-5:00 PM, EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AE
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Barbara Gilliam
BARBARA GILLIAM
PRIMARY EXAMINER